



# Sustainable low temperature HVAC systems for Food and Beverage applications



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## Maintaining the Cold Chain

The Cold Chain that stretches from processing to distribution through packaging and storage should provide an uncompromising level of quality and safety. Trane low temperature systems meet all hygrometry and glycol water supply requirements down to  $-8^{\circ}\text{C}$  with monopropylene and  $-12^{\circ}\text{C}$  with monoethylene.

## Cooling

Trane system solutions ensure the conservation of perishable foods (cooling and freezing) and offer market-leading economy in energy consumption.

One of the many examples could be a cold room with a storage temperature of  $2^{\circ}$  to  $4^{\circ}\text{C}$  created by a propylene glycol cooling system at  $-8^{\circ}\text{C}$ .

## Hot water production

Trane cooling systems offer «Free Heating» while cooling. By reusing the energy extracted from the cooling process elevated to temperatures up to  $80^{\circ}\text{C}$ , consumption of fossil fuel and the related  $\text{CO}_2$  footprint can be significantly reduced.

## No compromises in Safety, Sustainability or Performance

- Ozone impact: 0 ODP (Ozone Depletion Potential)
- Global Warming Potential: GWP <1 (less than  $\text{CO}_2$ )
- No TriFluoracetic Acid (TFA) production
- Non-flammable R1234ze at room temperature below  $30^{\circ}\text{C}$  (Class 2L)
- Non-toxic (Class A)



All our products meet the E.U. Ecodesign Directive:

Trane products are therefore eligible for energy saving certificates as required by local governments.



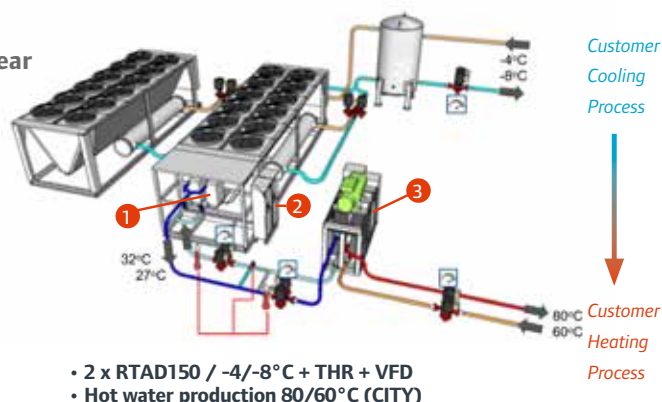
## Trane innovation continues during product lifetime

Trane Cooling systems are renowned for their long service life, so we have developed upgrade kits to make state-of-the-art performance achievable even half way through the system lifetime.

A food processing facility using 2 RTAD air-cooled chillers to keep their cold storage at  $+2^{\circ}$  /  $+4^{\circ}\text{C}$  needed hot water for daily washing. An upgrade solution was created by Trane Building Advantage Total Heat Recovery (re-using the energy from the cooling process) and a Variable Frequency Drive on the compressors (Efficiency improvement). A City RTSF heat pump was added to further boost temperature to  $80^{\circ}\text{C}$ . The total installation performance and reliability is optimized at all working conditions by Trane Chiller Plant Manager.

- Proven savings based on 1200 hours operation: **€11,120 / year**
- Proven savings by Trane Chiller Plant Manager: **€15,000 / year**
- Sanitary water production cost: **50% reduction** compared to the use of boilers

- 1 Heat Recovery Kit
- 2 VFD reducing compressor energy
- 3 HFO City RTSF heat pump



## Providing the right cooling solutions from warehousing to food processing plants



Cool storage



Freezing storage



Cheese dairy



Abattoir



Processed meat / salting products



Dairy plant

SINTESIS™

XSTREAM

CITY

R1234ze

### Sustainability

Trane portfolio comprises an extended range of HFO 1234ze units from 90kW to 1200 kW to meet the needs of all food and drink applications down to  $-8^{\circ}\text{C}$  with monopropylene and  $-12^{\circ}\text{C}$  with monoethylene.

### Reliability

Reliability is embedded in everything we do. All units leaving our factory are validated under real operating conditions at our European Research and Development Laboratory.

### Service

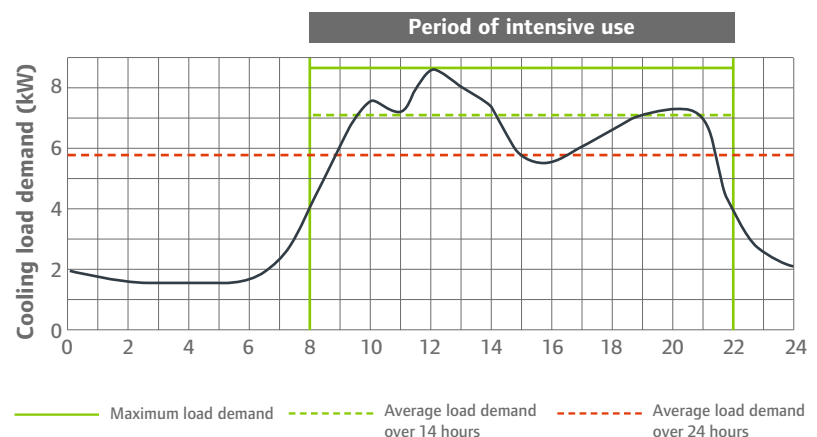
Trane designs equipment so that maintenance programs can be standardized and commonality of parts can be achieved where feasible.

### System upgrade

Enhance the performance of your existing system with Trane Building Advantage upgrade solutions, to optimize operation and reduce environmental impact.

### Typical cooling load profile

In Industrial Processes, there is no «one» favorite running condition of a cooling / heating plant. Trane Process Systems are designed to deliver maximum performance, at minimum energy consumption, in any condition - full load and part load.





# Trane Services

The real expertise of a manufacturer



- **Systems approach**
- **Dependable installations**
- **Energy saving solutions**
- **Operating cost optimization**
- **Chiller plant management solutions**
- **Chilled water production solutions.**

At Trane, we are committed to providing a comprehensive portfolio of HVAC solutions throughout your system lifecycle.



### **Breakdown resolution**

No one plans for breakdowns, but when they happen you need the right partner. Our expert Service Engineers use the latest diagnostic tools to guide you through your options to Repair, Renew, Replace or ReThink.



### **Secure operations**

At every point during the lifetime of your equipment - installation, commissioning, maintenance or breakdown - Trane can offer an effective solution with commissioning, first-aid kits and service agreements.



### **System upgrade**

Trane Building Advantage

Trane is committed to bringing the latest technological advantages to our customers through a wide portfolio of solutions which increase the Efficiency, Reliability and Sustainability of their HVAC plants. Our Service Engineers use their expertise together with the latest diagnostic tools to future-proof your system and make it "better than before".



### **Equipment rental**

For process capacity calibration, exceptional needs or when you want to ReThink HVAC management, Trane Rental Services have the right solution. With our extensive fleet of equipment, we can perfectly match your temporary heating and cooling requirements.



### **Contact us**

With over 1000 of the best trained sales engineers and service technicians in the industry, Trane is in the best position to serve your needs. Just call us and we will help you select the ideal HVAC solutions.